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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,331	04/18/2005	Aubrey L. Helms Jr	067538-5148US01	9309

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EXAMINER
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GAMBETTA, KELLY M

ART UNIT	PAPER NUMBER
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1792

MAIL DATE	DELIVERY MODE
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07/10/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/519,331

**Applicant(s)**

HELMES JR ET AL.

**Examiner**

KELLY GAMBETTA

**Art Unit**

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to the Sneh reference have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments regarding the Heinecke reference have been fully considered but they are not persuasive. The applicant argues that Heinecke discloses depositing a film with plasma, and not radicals. However, plasma is composed of radicals. The applicant further argues that Heinecke does not create radicals with UV radiation but the claims are not limited to UV, only electromagnetic radiation. The electromagnetic irradiation is composed of some of the claimed in claim 10 in column 9 lines 40-46. Therefore, these rejections are maintained and are repeated here.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-6 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Heinecke et al. (US 4935661)

As to claim 1, Heinecke et al. discloses a first gas, creating radicals from the first gas using electromagnetic radiation, purging by the vacuum, introducing a second gas, and creating radicals from the second gas using electromagnetic radiation. See column 2 line 29 - column 3 line 47 and the Examples.

As to claim 4, Heinecke et al. discloses pre-treating the substrate at least as broadly as it is claimed in the Examples.

As to claims 5 and 6, the purging and the steps are repeated for form a desired film in column 2 line 29 - column 3 line 47 and the Examples.

As to claim 10, the electromagnetic irradiation is composed of some of the claimed species in column 9 lines 40-46

As to claims 11-13, the claimed pressures are cited throughout Heinecke et al. in column 2 line 29 - column 3 line 47, and the Examples.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinecke et al.

Heinecke et al. discloses the claimed invention except for the claimed temperatures. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Heinecke et al. include the claimed temperatures- especially considering that they will be modified based on various precursor alternatives given throughout Heinecke et al. and the changing process conditions given in column 2 line 29 - column 3 line 47, and the Examples, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 223 (CCPA 1955).

Claims 1 and 4-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sneh et al. (US 6305314) in view of Heinecke et al.

As to claim 1, Sneh et al. discloses a first gas, creating radicals from the first gas using electromagnetic radiation, purging by the vacuum (reference number 63 in the Figures - at least as it is broadly claimed and described - see instant claim 5 for example), introducing a second gas, and creating radicals from the second gas using electromagnetic radiation. See column 6 line 64- column 7 line 55, for example. Sneh et al. uses a remote plasma source instead of a plasma source inside of the reaction chamber. Heinecke et al. teaches the plasma generated inside the chamber as discussed above. Therefore, this limitation would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See *KSR V. Teleflex*, 550 US- , 82 USPQ2d 1385 (2007).

As to claim 4, Sneh et al. discloses pre-treating the substrate at least as broadly as it is claimed in column 4, et seq.

As to claims 5 and 6, the purging is done by vacuum 63 in the Figures and the steps are repeated for form a desired film in column 8 et seq.

As to claim 10, the electromagnetic irradiation is composed of some of the claimed species in column 9 lines 40-46

As to claims 7-9 and 11-13, Sneh et al. discloses the claimed invention except for the claimed temperatures and pressures. It would have been obvious to a person

having ordinary skill in the art at the time the invention was made to modify Sneh et al. include the claimed temperatures and pressures - especially considering that they will be modified based on various precursor alternatives given throughout Sneh et al., since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 223 (CCPA 1955).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **KELLY GAMBETTA** whose telephone number is

(571)272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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